Potlatch

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August 01, 1999

Ms. Mary Lou Soscia
U.S. Environmental Protection Agency
Office of Ecosystems and Communities
811 S.W. Sixth Avenue
Portland, OR 97204

Mr. Mark Schneider
National Marine Fisheries Service
525 N.E. Oregon Street, Suite 500
Portland, OR 97232

Dear Ms. Soscia and Mr. Schneider:

The purpose of this letter is to provide a critique on the "Columbia River Temperature Assessment: Simulation Methods" being developed by EPA and also to offer some general comments regarding temperatures in the mainstem Snake and Columbia Rivers. This information is offered in the hopes of contributing to the ongoing technical dialogue within the Water Quality Team (WQT).

Simulation Methods

Enclosed is a detailed report of a review of the "Columbia River Temperature Assessment: Simulation Methods" (CR Assessment). I want to highlight several of the review findings in this letter.

- It needs to be recognized by the regulatory agencies that this model, as described in the study objectives part of the CR Assessment, is **only** for screening purposes. The complexity of the Columbia River Basin makes the development of any model a very challenging technical task. **Thus, the results from the use of such a model are not an adequate basis for setting policy.** Rather, the results should be used to guide further research and study of temperature in the mainstem rivers.
- The model **does appear** to have a sound technical basis, but complete verification is not possible because an established model was not used.
- The wrong water flows are used for the Snake River dam removal scenario. Natural flows during the critical temperature period in the river rarely exceed 60,000 cfs.
- **There is a significant discrepancy between how the model is used and how the model was calibrated.** The model is used to evaluate the high

temperatures that occur in the summer. However, the model's calibration and statistical evaluation are based on year-round temperatures. The model needs to be calibrated and evaluated on the basis of high temperature conditions in the rivers.

- The quality of the calibration and the degree of error in the model are difficult to understand in the report. It would be helpful to provide a table covering a several year period showing how well the model predicted exceedances above 20 °C as compared to actual river conditions.
- It appears that the model tends to predict temperatures that are too high in the summer. Furthermore, the amount of error appears to be comparable to the degree of temperature exceedance predicted.

Our conclusion of the model developed is that it provides **only qualitative information** about how dam modification could influence river temperatures. The changes suggested above would improve the quality of such information.

Historical Mainstem River Temperatures

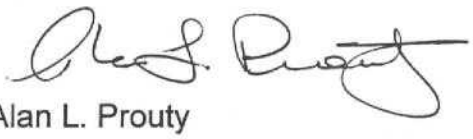
A topic that has not received much discussion at the two workshops that have been held on Columbia and Snake River temperatures is historical temperatures on these rivers. In other words, what temperatures has Mother Nature historically provided in the mainstem rivers? I realize that temperature data for periods greater than 20 years ago is scarce or non-existent. However, the examination of pristine or nearly pristine rivers and creeks that empty into mainstem rivers may provide an approximation of what temperatures could have been in the mainstem rivers before modifications were made. Two rivers in the Snake River basin that might be worthy of such an examination are the Selway and Lochsa Rivers.

There has been work by a number of individuals and organizations looking at how atmospheric temperatures, elevation and amount of canopy influence temperatures of water bodies. Enclosed is a copy of a report looking at predicting stream temperatures using these three factors. I wonder if such an approach, utilizing temperature data from pristine or nearly pristine rivers that exist at relatively low elevations (say 2000-3000 feet), would provide a methodology for approximating what temperatures are naturally achievable in mainstem rivers? The results from such calculations could be compared with current temperature data to approximate just how much of a temperature change has occurred in the modified rivers.

NMFS and EPA have recently stated that a maximum temperature of 64 °F should exist in the Lower Willamette River to help protect anadromous fish. Such a standard raises the question: is such a temperature realistically achievable? An analysis, such as suggested above, may help provide an answer.

As stated earlier in this letter, it is my hope that these thoughts and the enclosed documents contribute to the discussion that is occurring on how river modifications have influenced water temperatures. Any comments or questions are welcome. I can be contacted at 208.799.4104 or at alprouty@potlatchcorp.com. I am planning to attend the WQT meeting on August 10.

Sincerely,



Alan L. Prouty
Environmental Engineering Manager

enclosures (2)

c:

John McKern	U.S. Army Corps of Engineers
Jim Ruff	NW Power Planning Council
John Yearsley	EPA/Seattle